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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,016	08/29/2006	Atsushi Sano	129239	6640
25944 7590 07/09/2010 OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850				
EXAMINER				
ESSEX, STEPHAN J				
ART UNIT		PAPER NUMBER		
1795				
NOTIFICATION DATE		DELIVERY MODE		
07/09/2010		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

OfficeAction25944@oliff.com  
jarnstrong@oliff.com

# Office Action Summary

**Application No.**

10/591,016

**Applicant(s)**

SANO ET AL.

**Examiner**

STEPHAN ESSEX

**Art Unit**

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 April 2010.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.  
4a) Of the above claim(s) 8 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☐ Claim(s) 1-7 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 29 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SI/226)  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_  
Paper No(s)/Mail Date: \_\_\_\_\_

### **DETAILED ACTION**

1. The applicant's Request for Reconsideration filed on April 13, 2010 was received.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 103***

3. The rejection of claims 1-7 under 35 U.S.C. 103(a) as being unpatentable over Sotomura in view of Cooper et al. (hereinafter "Cooper") (U.S. Pat. No. 5,316,990) is maintained.

Regarding claims 1, 2 and 4-7, Sotomura teaches a method of making a composite electrode for use as an oxygen electrode or air electrode (cathode) in a fuel cell (see paragraph 1). The composite electrode contains an electrochemical catalyst A and an electrochemical catalyst B, wherein electrochemical catalyst A and/or the electrochemical catalyst B can be deposited by an electrochemical method such as a potential sweep method (see paragraph 54). Sotomura discloses an example of such a method wherein cobalt-4,4',4'',4'''-tetraamino phthalocyanine (CoTAPc) is dissolved in dimethyl sulfoxide (solvent) in order to form an electrochemical catalyst layer of p-CoTAPc (see paragraphs 58 and 59).

Sotomura does not explicitly teach providing a potential higher than 1.3 V or 1.6 V or less with reference to a standard hydrogen electrode.

Cooper teaches a catalyst material derived from precious metal-containing macrocyclic compound (metal complex) precursors (precursor layer). Said precursors undergo an activation process, which modifies the chemical state of the catalytic metal, to product the precious metal catalyst material. Suitable precious metals include Ru and suitable macrocyclic compounds include porphyrins and phthalocyanines (see col. 3, lines 14-17; col. 4, lines 28-32 and 41-42; col. 5, line 31-36). The catalyst is activated by sweeping an applied potential between 0.05 and 2.0 V with reference to a dynamic hydrogen electrode. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have swept and applied potential in the potential sweeping method of Sotomura because Cooper teaches that the potential sweep is used to activate the catalyst material (see col. 5, lines 13-15). In the case where the claimed ranges "overlap or lie inside ranges disclosed by prior art" a prima facie case of obviousness exists. See *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990); *In re Geisler*, 116 F.3d 1465, 1469-71, 43 USPQ2d 1362, 1365-66 (Fed. Cir. 1997) (see MPEP § 2144.05).

Further regarding claims 4-6, Sotomura teaches that electrochemical catalyst A may comprise metal complexes such as metal phthalocyanines or metal porphyrins having a porphyrin ring such as iron phthalocyanine, cobalt phthalocyanine, copper phthalocyanine, or manganese phthalocyanine (see paragraph 39).

***Response to Arguments***

4. Applicant's arguments filed April 13, 2010 have been fully considered but they are not persuasive.

*Applicant's principle arguments are as follows:*

A) *No portion of Cooper discloses or suggests preparing the electrode by depositing an electrochemical catalyst by a potential sweep method, as disclosed in Sotomura. Therefore, a person of ordinary skill in the art would conduct the potential sweep disclosed in Cooper for the same purpose as that disclosed in Cooper, i.e. in order to remove surface oxide coatings or organic coatings.*

5. In response to Applicant's arguments, please consider the following comments:

A) Sotomura teaches that the catalyst layer can be formed by depositing the electrochemical catalyst A and/or catalyst B using a potential sweep method. Cooper teaches a method wherein the catalyst precursor material is coated onto a substrate and activated by applying a potential between 0.05 and 2.0 V versus a dynamic hydrogen electrode. These are considered functionally equivalent methods of preparing the catalyst material as deposition is considered a means of coating.

***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHAN ESSEX whose telephone number is (571) 270-7866. The examiner can normally be reached on Monday - Friday, 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on (571) 272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SJE

/Dah-Wei D. Yuan/  
Supervisory Patent Examiner, Art Unit 1795